



**UNITED STATES DEPARTMENT OF COMMERCE**  
**Patent and Trademark Office**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/023,146 02/12/98 SANDHU

G 3369US (91-36

EXAMINER

MMC1/0316

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DANG, T

ART UNIT

PAPER NUMBER

2823

DATE MAILED:

03/16/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Advisory Action

Application No.

09/023,146

Applicant(s)

Sandhu

Examiner

Trung Dang

Group Art Unit

2823



## THE PERIOD FOR RESPONSE: [check only a) or b)]

- a) ☒ expires three months from the mailing date of the final rejection.
- b) ☐ expires either three months from the mailing date of the final rejection, or on the mailing date of this Advisory Action, whichever is later. In no event, however, will the statutory period for the response expire later than six months from the date of the final rejection.

Any extension of time must be obtained by filing a petition under 37 CFR 1.136(a), the proposed response and the appropriate fee. The date on which the response, the petition, and the fee have been filed is the date of the response and also the date for the purposes of determining the period of extension and the corresponding amount of the fee. Any extension fee pursuant to 37 CFR 1.17 will be calculated from the date of the originally set shortened statutory period for response or as set forth in b) above.

- ☐ Appellant's Brief is due two months from the date of the Notice of Appeal filed on \_\_\_\_\_ (or within any period for response set forth above, whichever is later). See 37 CFR 1.191(d) and 37 CFR 1.192(a).

Applicant's response to the final rejection, filed on Feb 23, 2001 has been considered with the following effect, but is NOT deemed to place the application in condition for allowance:

- ☐ The proposed amendment(s):

- ☐ will be entered upon filing of a Notice of Appeal and an Appeal Brief.
- ☐ will not be entered because:
- ☐ they raise new issues that would require further consideration and/or search. (See note below).
- ☐ they raise the issue of new matter. (See note below).
- ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal.
- ☐ they present additional claims without cancelling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- ☐ Applicant's response has overcome the following rejection(s): \_\_\_\_\_
- \_\_\_\_\_

- ☐ Newly proposed or amended claims \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment cancelling the non-allowable claims.

- ☒ The affidavit, exhibit or request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
see attachment

- ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

- ☒ For purposes of Appeal, the status of the claims is as follows (see attached written explanation, if any):

Claims allowed: none

Claims objected to: none

Claims rejected: 1-47

- ☐ The proposed drawing correction filed on \_\_\_\_\_ ☐ has ☐ has not been approved by the Examiner.
- ☐ Note the attached Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☐ Other

*Trung Dang*  
TRUNG DANG  
PRIMARY EXAMINER  
ART UNIT 2823

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In page 2 of the Remarks, applicant argues that the claimed subject matter is a process of forming tungsten silicide, not a specific type or formation of tungsten silicide. This is found unconvincing. As noted in the previous Office action, the claimed tungsten silicide encompasses all types of tungsten silicides. Thus, in order to make and/or use the invention, one must refer to the specification for the definition of the claimed tungsten silicide. However, all that is disclosed in the specification is a tungsten silicide films characterized by the formula  $WSi_x$ . Thus, without defining or specifying numerical values of  $x$ , one cannot determine a particular form of tungsten silicide so that the tungsten silicide as claimed can be deposited on a substrate. Would it be  $WSi$ ,  $WSi_{1.2}$ ,  $WSi_{1.5}$ ,  $WSi_2$ , or any amount of Si in the tungsten silicide film? The desired stoichiometry of a tungsten silicide film having a general formula  $WSi_x$  is known to depend largely on the deposition conditions such as active gases flow rates, deposition temperature, etc., and the resulted silicide film possesses different electrical characteristic. Two references cited in the parent case SN 08/506952 make it evident that the deposition of  $WSi_x$  where  $x$  is between 2.0 and 4.0 (see Brors, U.S. Pat. 4,851,295) and where  $x$  is between 0.01 and 0.1 (see Ohba, U.S. Pat. 4,902,645) requires totally different

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deposition conditions. Thus, in order to deposit a tungsten silicide as claimed which encompasses all forms of tungsten silicides, one having ordinary skill in the art would necessarily perform tremendous undue experimentations. The specification, therefore, does not contain a written description of the invention in a full, clear, and concise manner as required by the first paragraph of 35 U.S.C § 112.

As for the remaining issues including the issue of whether or not the instant specification provides sufficient direction and guidance so that the claimed tungsten silicide film (defined in the specification as  $WSi_x$ ) can be deposited without undue experimentation, applicant is invited to see the Examiner's response noted in the Office action mailed 5/12/2000 (paper No. 14).